I CLAIM:

1. A position measuring instrument, comprising:

a periodic incremental graduation comprising a plurality of graduation periods within one measurement range;

a reference marking disposed within said measurement range and integrated with said incremental graduation;

an arrangement of detector elements over at least a length of said measurement range for generating a plurality of periodic scanning signals of which at least one is modified locally by said reference marking; and

an evaluation device that receives said scanning signals and detects at least one scanning signal, modified by said reference marking, from said plurality of scanning signals and determines an absolute position of said reference marking within said length of said measurement range as a function of said detected at least one scanning signal.

2. The position measuring instrument of claim 1, wherein within said measurement range, N graduation periods are disposed, where $N > 1$ and is an integer;

said arrangement of detector elements over said length of said measurement range forms N groups, and each of said N groups of detector elements extends over said length of one graduation period;

within each of said N groups, a plurality of detector elements are spaced apart from one another by a fraction of one graduation period, so that, within one of said N groups, a plurality of periodic scanning signals phase-offset from one another are generated.

3. The position measuring instrument of claim 2, wherein in-phase scanning signals of all of said N groups are added together to form a common summation signal.

4. The position measuring instrument of claim 3, wherein said common summation signal is delivered to an interpolation unit for determining an absolute position within one graduation period.

5. The position measuring instrument of claim 2, wherein in-phase scanning signals of said N groups are delivered to said evaluation unit, which compares respective in-phase scanning signals with one another and from said comparison said evaluation unit determines one scanning signal for one of said N groups which is modified by said reference marking, and said one of said N groups determines a position of said reference marking within said length of said measurement range.

6. The position measuring instrument of claim 5, wherein said reference marking is an interference in periodicity at one location within one graduation period of said incremental graduation, and in-phase scanning signals, determined as a function of said location of said interference within said one graduation period, of detector elements of said N groups that scan said location within each of said N graduation periods are compared with one another.

7. The position measuring instrument of claim 5, wherein said respective in-phase scanning signals to be compared with one another for determining said position are determined by said absolute position that is formed by said interpolation unit.

8. The position measuring instrument of claim 1, wherein said reference marking is a variation of an interstice in a series of equally-spaced markings which forms said incremental graduation.

9. The position measuring instrument of claim 1, further comprising a second reference marker, wherein said length of said measurement range is an integral multiple of the spacing between said reference marking and said second reference marking.

10. The position measuring instrument of claim 1, wherein parallel to and next to said incremental graduation, an absolute code for absolute position measurement is disposed at measurement increments in accordance with said length of one measurement range.

11. The position measuring instrument of claim 10, wherein said absolute code is a single-track sequential code with successive code elements.

12. A method for position measurement, comprising:

scanning a plurality of graduation periods of one incremental graduation by a detector arrangement extending over a length of one measurement range, a reference marking being integrated with one of said graduation periods, and generating a plurality of periodic scanning signals, of which at least one is locally modified by said reference marking;

detecting said at least one scanning signal, modified by said reference marking, from among said plurality of periodic scanning signals; and

determining an absolute position of said reference marking within said length of

said measurement range as a function of said scanning signal detected.

13. The method of claim 12, wherein said scanning results in the generation of a plurality of scanning signals phase-offset from one another within each graduation period of said measurement range.

14. The method of claim 13, wherein scanning signals in-phase with one another in all said graduation periods are added together to form a common summation signal.

15. The method of claim 14, wherein said common summation signal is delivered to an interpolation unit, and an absolute position within one graduation period is ascertained.

16. The method of claim 13, wherein said scanning signals in-phase with one another are compared with one another, and from said comparison, said scanning signal whose amplitude is modified by said reference marking is determined.

17. The method of claim 15, wherein by said absolute position within one graduation period, said scanning signals within one graduation period that are to be compared with one another are determined for forming said position.